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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,814	07/17/2003	Subramaniam Radhakrishnan	4062-81	8987
23117	7590	04/19/2006	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			WONG, EDNA	
		ART UNIT	PAPER NUMBER	
		1753		

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/620,814	RADHAKRISHNAN ET AL.	
	<b>Examiner</b> Edna Wong	<b>Art Unit</b> 1753	

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 01 March 2006.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-20 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date .

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_ .  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_ .

This is in response to the Amendment dated March 1, 2006. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Response to Arguments***

#### **Claim Objections**

**Claims 1 and 12** have been objected to because of minor informalities.

The objection of claims 1 and 12 has been withdrawn in view of Applicants' amendment.

#### **Claim Rejections - 35 USC § 112**

**Claims 7, 9-11 and 13** have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection of claims 7, 9-11 and 13 has been withdrawn in view of Applicants' amendment.

#### **Claim Rejections - 35 USC § 102**

**Claims 1-4, 6 and 11-12** have been rejected under 35 U.S.C. 102(b) as being anticipated by **Tamamura et al.** (US Patent No. 4,559,112).

The rejection of claims 1-4, 6 and 11-12 under 35 U.S.C. 102(b) as being

anticipated by Tamamura et al. is as applied in the Office Action dated September 1, 2005 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants state that Tamamura discloses the presence of an insulating polymer layer that is between the conducting polymer layer and the metallic conducting backing layer. On the other hand, an insulating polymer layer is optional in Applicants' invention. When present, however, the insulating polymer layer in Applicants' invention is between the substrate and the metallic or conducting backing layer.

In response, Tamamura shows in Fig. 2B, a substrate **12** having a conducting backing layer **13** and an electrochemically coated conducting polymer **14** (= XXX ...).

The electrochemically coated conducting polymer **14** is polypyrrole electrochemically diffused or grown within in the insulating polymer film. Polypyrrole grows to reach the surface, and *the film becomes entirely conductive* (col. 3, line 61 to col. 4, line 8; and col. 36, claim 1). The entirely conductive film would have been a conducting polymer electrochemically coated **14** on the conductive backing layer **13** as shown in Fig. 2B.

Applicants state that even if all elements of the claimed invention were known, this is not sufficient by itself to establish a *prima facie* case of obviousness without some evidence that one would have been motivated to combine those teachings in the manner proposed by the Examiner.

In response, Nakama teaches that carbon is an electrode material used in ordinary electrolytic polymerization (col. 5, lines 3-22). An express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious (MPEP §2144.07).

Applicants state that the obviousness analysis based on hindsight.

In response, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicants state that whether shown explicitly or implicitly, however, broad conclusory statements standing alone are not evidence because the showing must be clear and particular.

In response, the Examiner's conclusory statements are derived from the teachings of the prior art. Pointing out the columns and lines did the showing of the teachings of the prior art by the Examiner which are deemed to be clear and particular.

Claim Rejections - 35 USC § 103

I. Claims 5 and 8-10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Tamamura et al.** (US Patent No. 4,559,112) as applied to claims 1-4, 6 and 11-12 above, and further in view of **Nakama et al.** (US Patent No. 5,126,017).

The rejection of claims 5 and 8-10 under 35 U.S.C. 103(a) as being unpatentable over Tamamura et al. as applied to claims 1-4, 6 and 11-12 above, and further in view of Nakama et al. is as applied in the Office Action dated September 1, 2005 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants state that Applicants' claimed invention, however, does not rely on enhancing conductivity by making the insulating polymer layer conductive. Instead, their invention focuses on providing a catalytically active electrode for oxidation of alcohols with a very specific construction.

In response, claim 1, as presently written, is open to making an insulating polymer layer conductive. The word "comprises" is inclusive and fails to exclude unrecited steps. *In re Horvitz* 168 F 2d 522, 78 USPQ 79 (CCPA 1948).

Applicants state that the citation of Nakama does not remedy the failure of Tamamura to disclose an electrode with the conducting polymer directly coated on the metallic or conducting backing layer (i.e., without an insulating polymer layer between).

In response, the rejection is not overcome by pointing out that one reference does not contain a particular limitation when reliance for that teaching is on another

reference. *In re Lyons* 150 USPQ 741 (CCPA 1966). Moreover, it is well settled that one cannot show nonobviousness by attacking the references individually where, as here, the rejection is based on a combination of references. *In re Keller* 208 USPQ 871 (CCPA 1981); *In re Young* 159 USPQ 725 (CCPA 1968).

II. Claim 7 has been rejected under 35 U.S.C. 103(a) as being unpatentable over **Tamamura et al.** (US Patent No. 4,559,112) as applied to claims 1-4, 6 and 11-12 above.

The rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over Tamamura et al. as applied to claims 1-4, 6 and 11-12 above is as applied in the Office Action dated September 1, 2005 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants state that there is no showing in the prior art or other evidence provided in the Action that concentration is a "result-effective variable" as alleged on page 11 of the Action.

In response, the Examiner maintains that the insulating polymer solution disclosed by Tamamura inherently has a concentration in which one having ordinary skill in the art can determine without undue experimentation (MPEP § 2164.01(a)).

III. Claims 13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Tamamura et al.** (US Patent No. 4,559,112) as applied to claims 1-4, 6 and 11-12

above, and further in view of **JP 2-18423** ('423).

The rejection of claim 13 under 35 U.S.C. 103(a) as being unpatentable over Tamamura et al. as applied to claims 1-4, 6 and 11-12 above, and further in view of JP 2-18423 ('423) is as applied in the Office Action dated September 1, 2005 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants state that there is no showing in the prior art or other evidence that one of ordinary skill in the art would have been motivated to modify Tamamura's process of electrochemically coating by using a different solvent system (e.g., JP's dissolving aniline in water and a mineral acid).

In response, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Applicants state that there is no teaching or suggestion in Tamamura, Nakama, or JP for an electrically conducting polymer electrode with specific catalytic activity for oxidation of alcohols.

In response, the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It

is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by the Applicants. *In re Linter* 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon* 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), *cert. denied*, 500 US 904 (1991); and MPEP § 2144.

Applicants state that that in neither Nakama nor JP is there any mention of an insulating polymer layer at all. Therefore, there would have been no motivation to read the three references together. Tamamura, in particular, focuses specifically on solving a problem associated with insulating polymer coated electrode substrates.

In response, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

***Response to Amendment***

***Claim Rejections - 35 USC § 103***

I. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tamamura et al.** (US Patent No. 4,559,112) as applied to claims 1-4, 6 and 11-12 above, and further in view of **Nakama et al.** (US Patent No. 5,126,017) as applied to

claims 5 and 8-10 above.

Tamamura and Nakama are as applied in the Office Action dated September 1, 2005 and incorporated herein.

Nakama teaches  $\text{FeCl}_3$  (col. 4, lines 26-38).

Nakama teaches that the electrolyte concentration is from 0.01 to 5 mol/l (col. 4, lines 57-59 and col. 4, line 64 to col. 5, line 2).

II. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamamura et al. (US Patent No. 4,559,112) as applied to claims 1-4, 6 and 11-12 above, and further in view of JP 2-18423 ('423) as applied to claim 13 above.

Tamamura and JP '423 are as applied in the Office Action dated September 1, 2005 and incorporated herein.

JP '423 teaches dissolving aniline or its derivative and a salt of  $\text{LiBF}_4$  in an organic solvent (e.g., acetonitrile) or dissolving aniline or its derivative in water together with an acid (e.g.,  $\text{HBF}_4$ ,  $\text{HClO}_4$ ,  $\text{HCl}$  or  $\text{H}_2\text{SO}_4$ ) [abstract].

#### ***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter:

Claims 17-20 define over the prior art of record because the prior art does not teach or suggest a process for the preparation of a conducting electrode comprising the

steps of coating and electrochemically coating as presently claimed, esp., the step of coating an insulating polymer coated substrate with a metallic or conducting backing layer to obtain a metallic or conducting backing layer coated substrate.

The prior art does not contain any language that teaches or suggests the above. *Tamamura et al.* do not teach coating an insulating polymer coated substrate with a metallic or conducting backing layer to obtain a metallic or conducting backing layer coated substrate. Therefore, a person skilled in the art would not have been motivated to adopt the above conditions, and a *prima facie* case of obviousness cannot be established.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

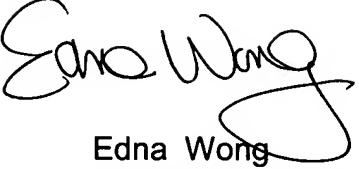
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Edna Wong  
Primary Examiner  
Art Unit 1753

EW  
April 17, 2006